

REMARKS

In accordance with the foregoing, the drawings, title and claims 1, 5, 6-8, 10, and 11 have been amended. Claims 13-15 have been added. Claims 1-15 are pending and under consideration. No new matter has been presented.

OBJECTION TO THE DRAWINGS:

The drawings are objected to under 37 CFR 1.83(a).

The Examiner asserts that the drawings (FIG. 1) must show every feature of the invention specified in the claims (i.e., "linear prediction coefficient in which a wide-code speech signal to be coded is perceptual weight filtered").

The present invention clearly shows "the linear prediction coefficient analyzer 102 analyzes a linear prediction coefficient of the signal pre-processed by the pre-processing filter 101 to obtain the linear prediction coefficient and embodies the perceptual weighting filter 103 for use in codebook retrieving using the linear prediction coefficient. The perception weighting filter weighs quantization noise of an auditorily sensitive frequency wide-band and performs perceptual weighing filtering the per-processed signal so that efficient coding is performed."(page 6, lines 13-19).

The drawing are objected to under 37 CFR 1.83(a) because they fail to show a connection between the open-circuit pitch retrieving unit and the perceptual weighing filter as described in the specification (see page 6, lines 20-22).

FIG. 1 has been amended to clarify the present invention.

The present application sets forth that "the open-circuit pitch retrieving unit 104 performs open-circuit pitch retrieving using the signal that is perceptually weigh filtered by the perceptual weighting filter 103." No new matter has been entered.

As such, it is respectfully submitted that the objection to the drawings be reconsidered.

OBJECTION TO THE TITLE:

The title of the invention is object to as not being descriptive.

In view of the proposed amended title set forth above, the outstanding objection to the title should be resolved.

OBJECTION TO THE ABSTRACT:

The abstract of the disclosure is objected to as being too long and containing legal phraseology.

In view of the amended abstract set forth above, the outstanding objection to the title should be resolved.

OBJECTION TO THE CLAIMS:

Claims 1-10 are objected to as being informalities.

In view of the above, withdrawal of this objection is respectfully requested.

REJECTION UNDER 35 U.S.C. §112:

Claims 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 12 have been amended.

It is respectfully submitted that the rejection of claims 11 and 12 be withdrawn.

REJECTION UNDER 35 U.S.C. §102:

Claims 1,4, 6, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao (U.S. Patent No. 6,449,590) in view of Ozawa (U.S. Patent No. 5,487,128) and further in view of Laflamme et al. ("16Kbps Wideband Speech Coding Technique Based on Algebraic CELP," 1991).

Claim 1 recites, among other elements, "a speech characteristic classification unit, which stipulates a characteristic of speech corresponding to a current frame statistically using an open-circuit pitch value and a linear prediction coefficient in which a speech signal to be coded is perceptual weight filtered."

However, Cao discusses "short-term prediction, or linear prediction (LP) analysis is preformed twice per speech frame using the autocorrelation approach with 30ms windows. Specifically, two LP analyses are performed twice per frame using two different windows."(col. 10, lines 42-46).

As acknowledged by the Examiner, Cao merely discloses a speech encoder comprising an adaptive codebook and a second fixed codebook having multiple subcodebooks, Gao does not teach two fixed codebook units, specifically a first codebook unit that outputs a difference between a codebook contribution and a target.

Further, Ozawa merely discusses a first codebook and second codebook.

However, Ozawa fails to discuss "an adaptive codebook", "a first fixed codebook", and "a second codebook" as recited in claim 1.

Since Ozawa does not disclose or suggest using an adaptive codebook with a first codebook and second codebook, it is respectfully submitted that the combination of Cao and Ozawa does not disclose or suggest that the features as recited in claim 1.

In addition, Laflamme et al. merely discusses wideband speech using a CELP coding scheme.

Thus, it is further respectfully submitted that the combination of Cao, Ozawa, and Laflamme et al. does not disclose or suggest that the features as recited in claim 1.

In addition, claim 4 is patentable due at least to its depending from claim 1, as well as for the additional recitations therein.

In addition, claims 6 and 9 are patentable due at least to the same or similar rationale as claims 1 and 6, respectively, as well as for the additional recitations therein.

Claims 11 and 12 are patentable due at least to the similar rationale as claim 1, as well as for the additional recitations therein.

Claims 2-3, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao (U.S. Patent No. 6,449,590) in view of Ozawa (U.S. Patent No. 5,487,128) and further in view of Laflamme et al. ("16Kbps Wideband Speech Coding Technique Based on Algebraic CELP," 1991) and yet further in view of Chhatwal et al. (U.S. Patent No. 5,457, 783).

Claim 2 recites "wherein the second fixed codebook is composed of an algebraic codebook and a random codebook, and the second fixed codebook retrieving unit retrieves the random codebook in fricative sound or affricate section and retrieves the algebraic codebook in other sections."

However, Chhatwal et al. discusses "One solution to this problem would be to use a traditional random codebook based on noise-like waveforms in parallel with the bi-pulse codebook so that the bi-pulse codebook was used when it modeled the signal best, while the random codebook was used to model the certain types of unvoiced speech for which it was most appropriate. However, the disadvantage of this approach is that, as mentioned before, the random codebook is much more difficult to search than the bi-pulse codebook. The ideal solution would be to take the bi-pulse codebook vectors and transform them in some way such that they produced noise-like waveforms. Such an operation has the additional constraint that the transformation be easy to compute since this computation will be done many times in each frame." (col. 13, lines 50-63).

It is respectfully submitted that the combination of Gao, Ozawa, Laflamme et al., and Schhatwal et al. does not teach or suggest the invention as recited in claim 2, since Schhatwal et al. teaches away to use both bi-pulse codebook and random codebook.

In addition, claim 3 is patentable due at least to similar rationale as claim 2, as well as for the additional recitations therein.

Claims 7 and 8 are patentable due at least to similar rationale as claims 2 and 3, respectively, as well as for the additional recitations therein.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao in view of Ozawa and further in view of Laflamme et al. and yet further in view of Westerlund et al. (U.S. Patent No. 6,757,654).

Amended claim 5 recites "wherein the second fixed codebook gain values include a second standardized fixed codebook gain value and a ratio of the second standardized fixed codebook gain value and gain values of other second fixed codebooks."

However, Westerlund et al. discusses "the predictor could be updated based on energy changes present between frames. The encoder module could measure the distribution (e.g., ratio) between the LTP gain and the algebraic gain and send it with very few bit." (col. 21, lines 35-38).

As noted above, Westerlund et al. discusses the distribution between the LTP gain and the algebraic gain.

However, Westerlund et al. fails to disclose "wherein the second fixed codebook gain values include a second standardized fixed codebook gain value and a ratio of the second standardized fixed codebook gain value and gain values of other second fixed codebooks."

Thus, it is respectfully submitted that that the combination of Gao, Ozawa, Laflamme et al., and Westerlund et al. does not teach or suggest the invention as recited in claim 5.

Claim 10 is patentable due at least to the similar or the same rationale as claim 5, as well as for the additional recitations therein.

New claims 13 and 14 merely restate features of claim 12.

New Claim 15 emphasizes the inclusion of three code books not taught or suggested by the prior art as discussed above.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

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If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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